TCM-S68V

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MT-S63

SPECIFICATIONS

Recording system — 2-track 1 channel monaural
Frequency response — 250 – 6,300 Hz
Speaker — Approx. 3.6 cm ($17/16$ in.) dia.
Power output — 130 mW (at 10% harmonic distortion)
Input — Microphone input jack (minijack) sensitivity 0.2 mV for 3 kΩ or lower impedance microphone
Output — Earphone jack (minijack) for 8 – 300 Ω earphone
Power requirements — 3 V DC, two R6 (size AA) batteries
DC IN 3V jack accepts:
• Sony AC power adaptor AC-E30M AC power adaptor (not supplied) for use on:

Canada,US	120 V AC, 60 Hz
U.K.	240 V AC, 50 Hz
European countries,E	220 V AC, 60 Hz or 220 V AC, 50 Hz

• Sony DCC-E130L car battery cord (not supplied) for use on 12 V car battery.

Battery life

Batteries	Recording
Sony batteries SUM-3 (NS)	Approx. 4 hours
Sony alkaline batteries AM3(N)	Approx. 12 hours

Dimensions — Approx. 93.6 x 120.1 x 39.1 mm (w/h/d) ($33/4$x$47/8$x$19/16$ in.) incl. projecting parts and controls
Mass — Approx. 285g (10.1 oz.) incl. batteries

Optional accessories
Car battery cord DCC-E130L
Monaural earphone ME-81, ME-L82
Connecting cord RK-G64HG
Electret condenser microphone ECM-T10(Except US)
Electret condenser microphone ECM-011(US)
AC power adaptor AC-E30M

Your dealer may not handle some of the listed optional accessories. Please ask the dealer for detailed information.

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

使用時は添付資料も参照のこと
Refer to the additional documents

CASSETTE-CORDER

SONY®

Operating with Batteries

When to replace the batteries

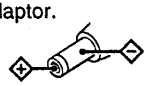
When the batteries become weak, the REC/BATT indicator will glow faintly and the playback sound will become distorted or unstable.
In this case, replace both batteries with new ones.
Concerning the battery life, see "Specifications".

Operating on House Current

Note on the AC power adaptor

Use only the AC-E30M AC power adaptor (not supplied).
Do not use any other AC power adaptor.

Polarity of the plug
(Unified polarity type)



Note

Power will be supplied through the AC power adaptor or the car battery cord when it is connected to the unit instead of the installed batteries.
Make sure that the AC power adaptor or the car battery cord is disconnected from the unit when you wish to use the unit with the installed batteries.

SERVICE NOTE

- **Repairing printed resistor**

  Cut both side of the resistor and solder the carbon resistor having same value in place of printed one of the conductor side. 1/32W carbon resistor is supplied for the replacing part of the printed resistor.

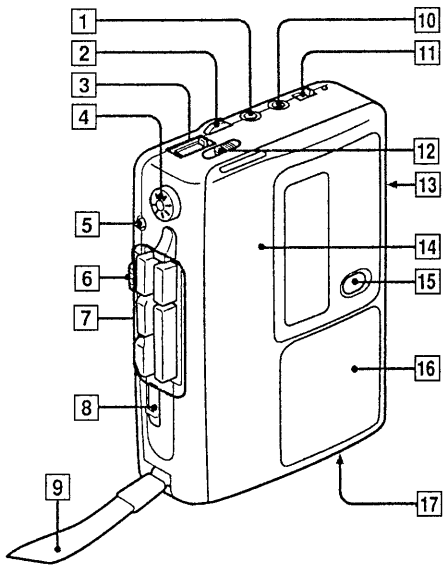
Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. PARTS IDENTIFICATION



1 MIC (microphone) (plug in power) jack
2 ◢ VOL (volume) control
3 COUNTER (tape counter) and counter reset button
For indexing the tape contents. Before recording, press the counter reset button to set the tape counter to "000".
4 MIC (built-in microphone)
5 REC/BATT (recording/battery) indicator
6 • ◢ FAST PB (fast playback) switch
7 Tape operation buttons
● REC (record)/ ▶ PLAY/ ■ STOP/ ▶▶ FF/CUE (fast forward/cue)/ ◀◀ REW/REVIEW (rewind/review) button
8 PAUSE ▬ switch
9 Handstrap
10 EAR (earphone) jack
11 VOR (Voice Operated Recording) switch
12 MIC SENS (microphone sensitivity) switch
13 Battery compartment (rear)
14 Cassette holder
15 CUE MARKER button
16 Speaker (built-in)
17 DC IN 3V (external power input) jack

SECTION 2
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record/playback head — pinch roller
   erase head — rubber belts
   capstanidlers

2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)

3. Do not use a magnetized screwdriver for the adjustments.

4. After the adjustments, apply suitable locking compound to the parts adjusted.

5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Power Supply Voltage : 3V dc

Torque Measurement

Torque	Meter Reading	Torque Meter
Forward	More than 23 – 45 g-cm (More than 0.32 – 0.62 oz-inch)	CQ-102C
Fast Forward and Rewind	More than 60 g-cm (More than 0.83 oz-inch)	CQ-201B
Back Tension	1.5 – 3.5 g-cm (0.021 – 0.049 oz-inch)	CQ-102C

Tape Tension Measurement

Meter	Meter Reading
CQ-403A	More than 60g(2.12 oz)

SECTION 3
ELECTRICAL ADJUSTMENTS

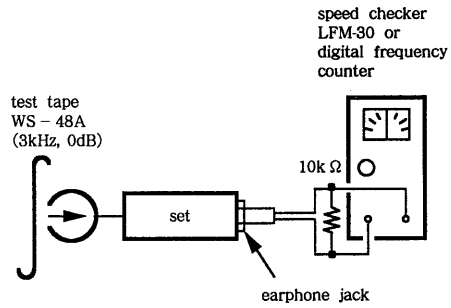
Test tape

Type	Signal	Used for
WS-48A	3kHz, 0dB	tape speed adjustment

Tape Speed Adjustment

Setting:
VOL control: mechanical mid

Procedure:
Mode: playback

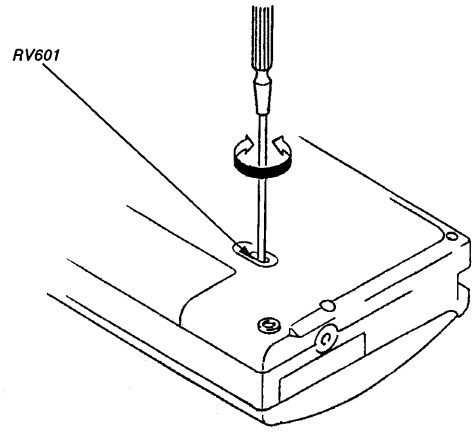


Specification:

Speed checker	Digital frequency counter
– 0.5 to +1.5%	3,000 ± 15 Hz

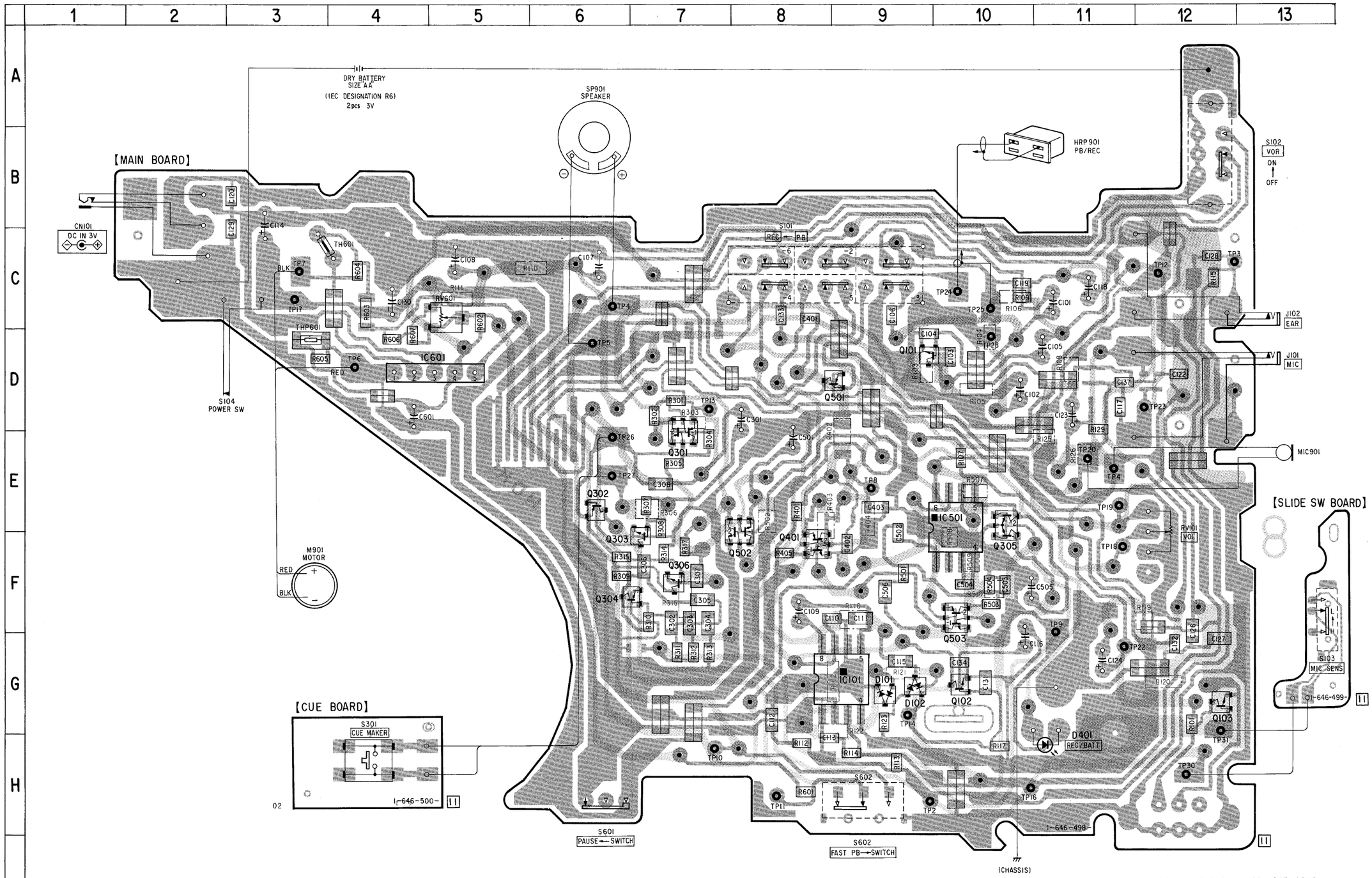
Frequency difference between the beginning and the end of the tape should be within 1% (30Hz).

Adjustment Location : Main Board



• SEMICONDUCTOR LOCATION

Ref. No.	Location
D101	G-9
D102	G-9
D401	H-11
IC101	G-9
IC501	E-10
IC601	D-5
Q101	D-9
Q102	G-10
Q103	G-12
Q301	E-7
Q302	E-6
Q303	F-7
Q304	F-6
Q305	E-10
Q306	F-7
Q401	F-8
Q501	D-9
Q502	E-8
Q503	F-10

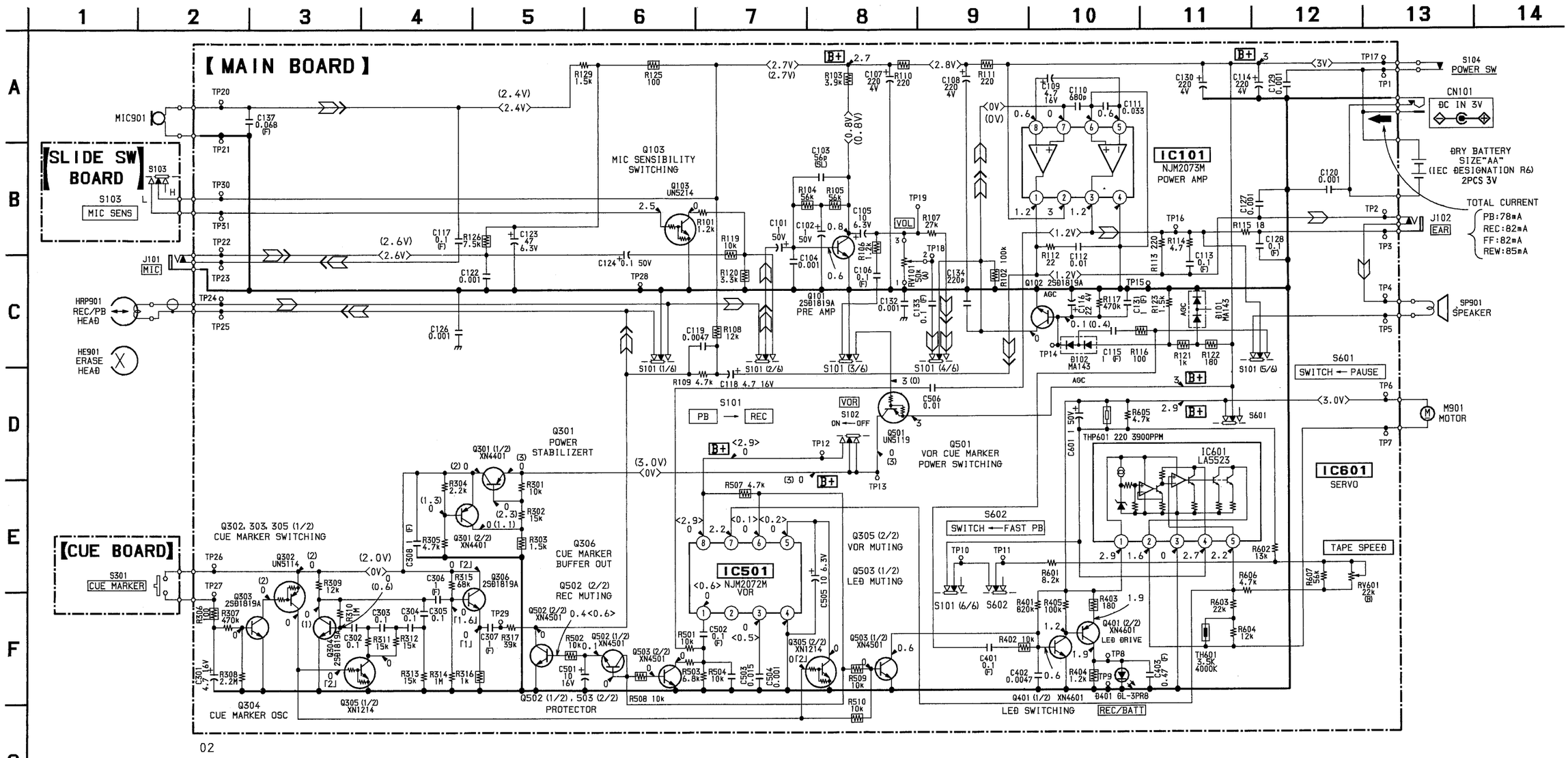


Note:

- ○— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▩ : Pattern on the side which is seen.
- ▩ : Pattern of the rear side.
- ▭ : printed resistor.

TCM-S63/S64V/S65/S66V/S67V/S68V(SM)
5.1M

4-2. SCHEMATIC DIAGRAMS

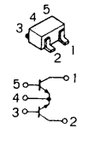


● SEMICONDUCTOR LEAD LAYOUT

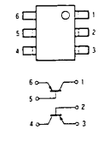
LA5523

2SD1819A-R
2SD1819A-S
UN5114
UN5119
UN5214-TW

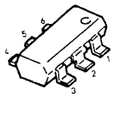
XN1214



XN4401

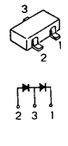


XN4501

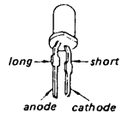


XN4601

1SS226



TLR124



Note :

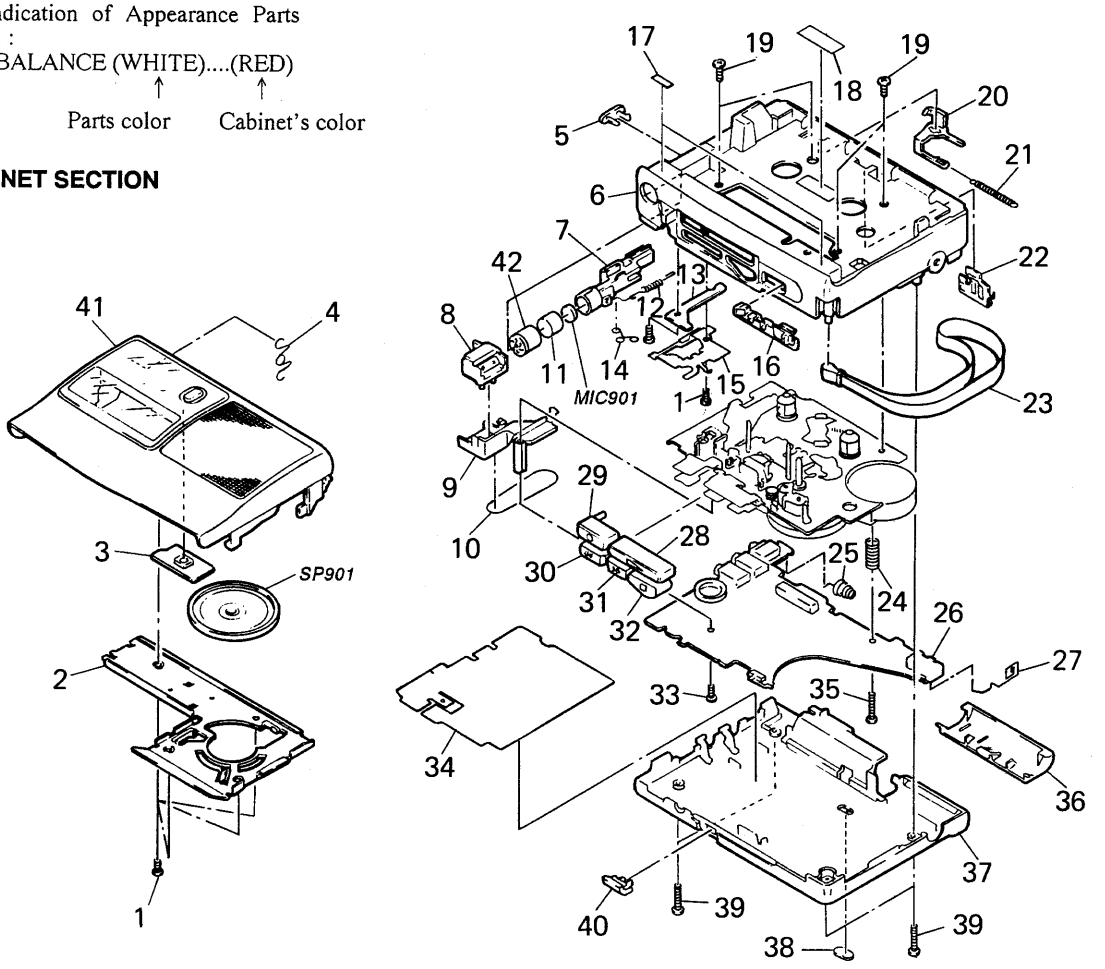
- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- : printed resistor.
- B+ : B+ Line
- : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is dc 3V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PLAY
  ( ) : REC
  〈 〉 : VOR ON
  [ ] : CUE ON
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : PB
  : REC

SECTION 5
EXPLODED VIEWS

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts Example :
  KNOB, BALANCE (WHITE)....(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark)list is given in the last of this parts list.

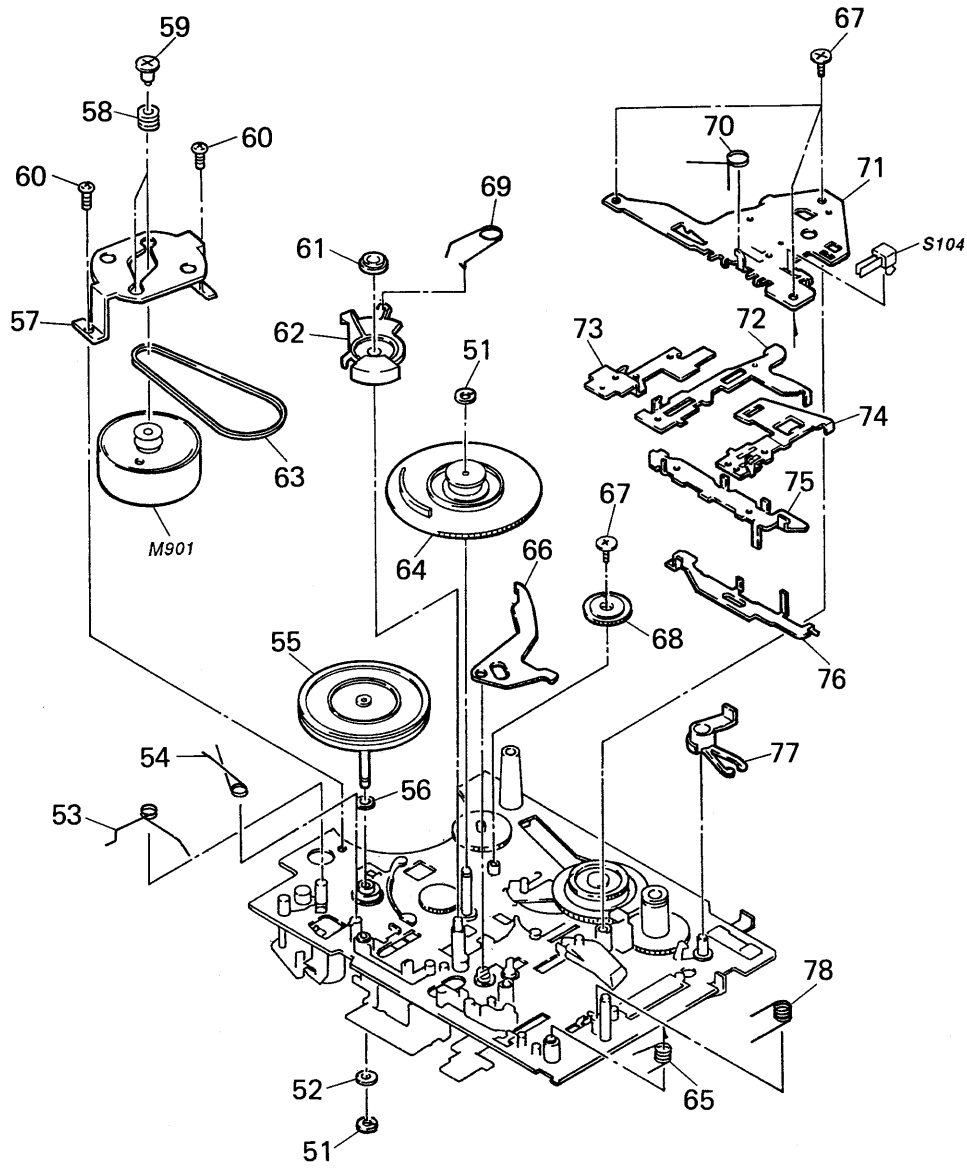
5-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	3-318-382-01	SCREW (1.7X3), TAPPING	
* 2	3-385-848-01	BRACKET (SPK2)	
* 3	1-646-500-11	CUE SW (PRC) BOARD	
4	3-346-509-11	SPRING, CASSETTE-UP	
5	3-385-883-01	KNOB (SLIDE)	
6	3-385-886-51	CABINET (FRONT)	
7	3-385-882-01	HOLDER (POP-UP)	
8	1-548-582-11	COUNTER, TAPE (SMALL TYPE)	
9	3-386-077-01	BRACKET (COUNTER)	
10	3-386-076-01	BELT (COUNTER)	
* 11	3-385-885-01	CUSHION (MICROPHONE POP)	
12	3-385-879-01	SPRING (POP-UP), TENSION	
* 13	1-646-499-11	SLIDE SW (PRC) BOARD	
14	3-385-880-01	SPRING (POP-CLICK)	
15	3-385-878-01	SPRING (POP-UP), LEAF	
16	3-385-870-01	KNOB (PAUSE)	
17	3-831-441-XX	CUSHION	
18	3-578-101-21	PLATE, ORNAMENTAL	
19	3-318-203-61	SCREW (B1.7X4), TAPPING	
20	3-385-866-01	LEVER (CLAW DETECTION)	
21	3-385-855-01	SPRING(CLAW DETECTION), TENSION	
22	3-385-867-01	SPRING(CASSETTE RETAINER), LEAF	

Ref. No.	Part No.	Description	Remark
23	3-320-982-01	STRAP, HAND	
24	3-386-123-01	SPRING (PC BOARD GROUND)	
25	3-385-864-01	SPRING, BATTERY COIL	
* 26	A-3016-289-A	MAIN BOARD, COMPLETE	
27	3-385-863-01	TERMINAL, BATTERY	
28	3-385-859-01	BUTTON (PLAY)	
29	3-385-858-01	BUTTON (REC)	
30	3-385-860-01	BUTTON (FF)	
31	3-385-861-01	BUTTON (REW)	
32	3-385-862-01	BUTTON (STOP)	
33	3-345-648-03	SCREW (M1.4X4.0), TOOTHED LOCK	
34	3-385-871-01	PAPER, SHIELD	
35	3-386-078-02	SCREW	
36	3-385-876-01	LID, BATTERY CASE	
37	3-385-869-01	CABINET (REAR)	
38	3-358-363-11	PLATE, BLIND	
39	3-334-565-01	SCREW (B1.7X10), TAPPING	
40	3-385-857-01	KNOB (F-PB)	
41	X-3366-084-1	LID (B-C) ASSY, CASSETTE	
42	3-385-881-01	CASE (POP MICROPHONE)	
MIC901	1-542-142-11	MICROPHONE, BUILT-IN	
SP901	1-544-657-11	SPEAKER (3.6CM)	

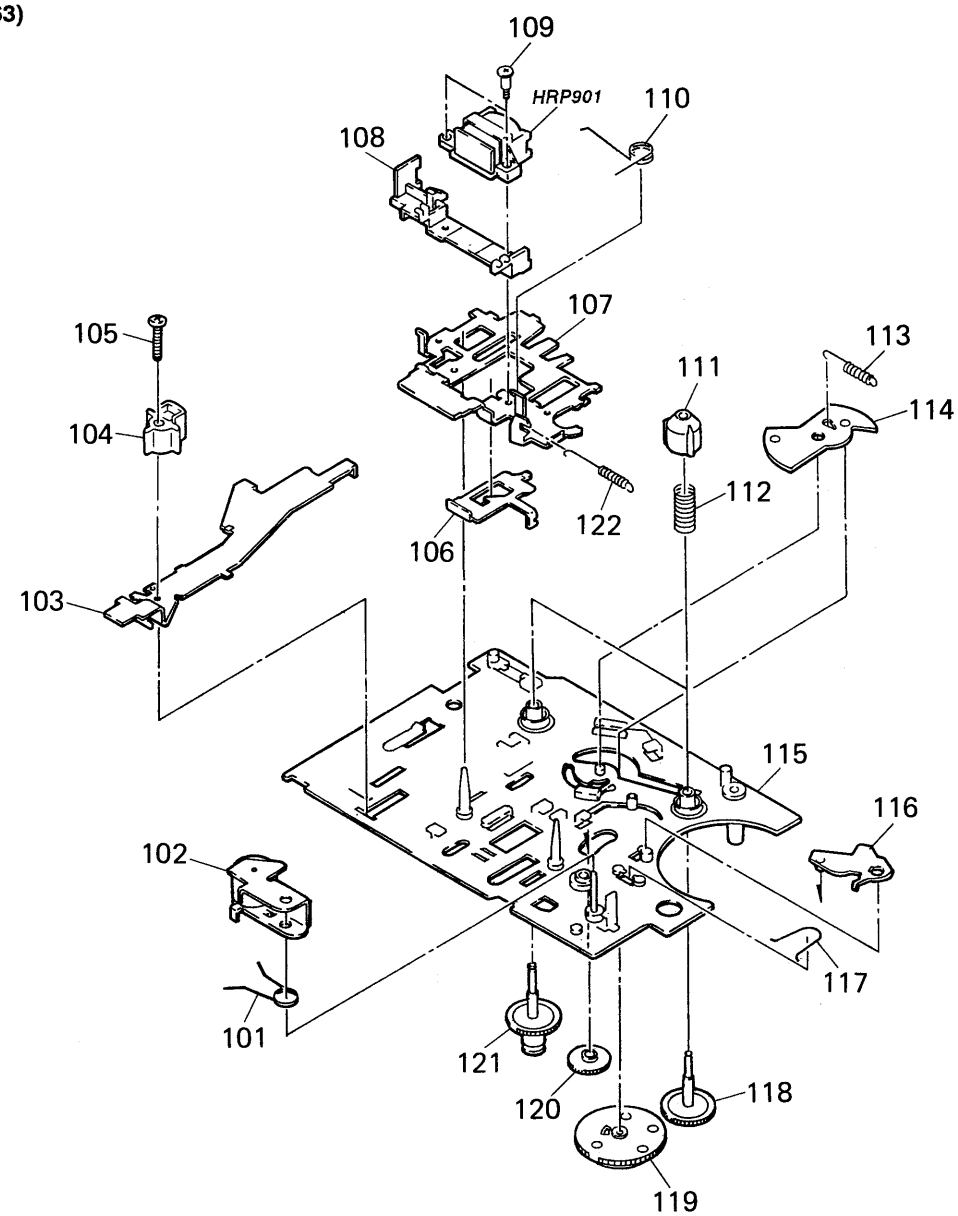
5-2. MECHANISM SECTION-1
(MT-S63)



Ref. No.	Part No.	Description	Remark
51	3-385-743-01	WASHER	
52	3-385-753-01	WASHER	
53	3-385-732-01	SPRING	
54	3-385-733-01	SPRING	
55	X-3366-064-1	ASSY, FLYWHEEL	
56	3-385-754-01	P WASHER	
57	3-385-748-01	BRACKET, MOTOR	
58	3-385-749-01	RUBBER, MOTOR	
59	3-385-750-01	SCREW	
60	3-385-751-01	SCREW	
61	3-385-746-01	BUSH, GEAR	
62	3-385-744-01	LEVER, AS	
63	3-385-752-01	BELT	
64	X-3366-063-1	ASSY, FRICTION	
65	3-385-734-01	SPRING	

Ref. No.	Part No.	Description	Remark
* 66	3-385-735-01	LEVER, FR	
67	3-385-728-01	SCREW	
68	3-385-727-01	GEAR, FF	
69	3-385-745-01	SPRING	
70	3-385-742-01	SPRING	
* 71	3-385-741-01	GUIDE, LEVER	
* 72	3-385-740-01	LEVER, FF	
* 73	3-385-731-01	LEVER, STOP	
* 74	3-385-739-01	LEVER, REW	
* 75	3-385-737-01	LEVER, LOCK	
* 76	3-385-736-01	LEVER, SWITCH	
77	3-385-730-01	ARM, REC	
78	3-385-738-01	SPRING	
M901	X-3366-095-1	MOTOR, ASSY	
S104	1-692-400-11	SWITCH, LEAF(POWER)	

5-3. MECHANISM SECTION-2
(MT-S63)



Ref. No.	Part No.	Description	Remark
101	3-385-726-01	SPRING	
102	X-3366-062-1	ASSY, PINCH ARM	
* 103	3-385-724-01	LEVER, REC	
104	X-3366-061-1	ASSY, E/H C	
105	3-385-725-01	SCREW	
* 106	3-385-719-01	PLATE, PLAY	
* 107	3-385-718-01	CHASSIS, HEAD	
108	3-385-721-01	GUIDE, HEAD	
109	3-385-723-01	SCREW	
110	3-385-720-01	SPRING	
111	3-385-716-01	REEL	
112	3-385-715-01	SPRING	

Ref. No.	Part No.	Description	Remark
113	3-385-717-01	SPRING	
114	X-3366-060-1	ASSY, CENTER ARM	
115	X-3366-058-1	ASSY, MECHA CHASSIS	
116	X-3366-059-1	ASSY, PLAY ARM	
117	3-385-712-01	SPRING	
118	3-385-713-01	GEAR, REEL	
119	X-3366-065-1	ASSY, GEAR FR	
120	3-385-729-01	GEAR, PLAY	
121	3-385-714-01	GEAR, REEL	
122	3-385-756-01	SPRING	
HRP901	1-543-607-21	HEAD, MAGNETIC (REC/PB)	

CUE SW **MAIN**

SECTION 6
ELECTRICAL PARTS LIST

NOTE :
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		CUE SW BOARD, COMPLETE			
		**********			
*	1-646-500-11	CUE SW (PRC) BOARD			
		< SWITCH >			
S301	1-571-887-21	SWITCH, KEY BOARD (CUE MARKER)			
**********					
*	A-3016-289-A	MAIN BOARD, COMPLETE			
		**********			
*	3-385-856-01	CUSHION (LED)			
		< CAPACITOR >			
C101	1-126-301-11	ELECT	1uF	20%	50V
C102	1-126-160-11	ELECT	1uF	20%	50V
C103	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C104	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C105	1-126-157-11	ELECT	10uF	20%	16V
C106	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C107	1-104-402-21	ELECT	220uF	20%	4V
C108	1-124-635-00	ELECT	220uF	20%	4V
C109	1-126-163-11	ELECT	4.7uF	20%	50V
C110	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C111	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C113	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C114	1-124-635-00	ELECT	220uF	20%	4V
C115	1-164-346-11	CERAMIC CHIP	1uF		16V
C116	1-124-430-00	ELECT	22uF	20%	4V
C117	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C118	1-126-163-11	ELECT	4.7uF	20%	50V
C119	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C120	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C122	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C123	1-126-154-11	ELECT	47uF	20%	6.3V
C124	1-124-463-00	ELECT	0.1uF	20%	50V
C126	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C127	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C128	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C129	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C130	1-124-635-00	ELECT	220uF	20%	4V
C131	1-164-346-11	CERAMIC CHIP	1uF		16V
C132	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C133	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C134	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C137	1-164-490-11	CERAMIC CHIP	0.068uF		16V
C301	1-126-163-11	ELECT	4.7uF	20%	50V
C302	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C303	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C304	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C305	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C306	1-164-346-11	CERAMIC CHIP	1uF		16V
C307	1-164-346-11	CERAMIC CHIP	1uF		16V
C308	1-164-346-11	CERAMIC CHIP	1uF		16V
C401	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C402	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C403	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C501	1-126-157-11	ELECT	10uF	20%	16V
C502	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C503	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C504	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C505	1-126-157-11	ELECT	10uF	20%	16V
C506	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C601	1-126-160-11	ELECT	1uF	20%	50V
		< CONNECTOR >			
CN101	1-580-919-11	JACK, DC(POLARITY UNIFIED TYPE)(DC IN 3V)			
		< DIODE >			
D101	8-719-800-76	DIODE 1SS226			
D102	8-719-800-76	DIODE 1SS226			
D401	8-719-812-41	LED TLR124 (REC/BATT)			

MAIN

Ref.No.	Part No.	Description	Remark
		< IC >	
IC101	8-759-701-02	IC NJM2073M	
IC501	8-759-701-51	IC NJM2072M	
IC601	8-759-801-12	IC LA5523	
		< JACK >	
J101	1-569-215-31	JACK (MIC)	
J102	1-569-215-31	JACK (EAR)	
		< JUMPER RESISTOR >	
JR1	1-216-295-00	METAL CHIP 0 5%	1/10W
JR3	1-216-296-00	METAL CHIP 0 5%	1/8W
JR4	1-216-296-00	METAL CHIP 0 5%	1/8W
JR5	1-216-296-00	METAL CHIP 0 5%	1/8W
JR6	1-216-296-00	METAL CHIP 0 5%	1/8W
JR7	1-216-296-00	METAL CHIP 0 5%	1/8W
JR9	1-216-295-00	METAL CHIP 0 5%	1/10W
JR10	1-216-296-00	METAL CHIP 0 5%	1/8W
JR11	1-216-296-00	METAL CHIP 0 5%	1/8W
JR15	1-216-296-00	METAL CHIP 0 5%	1/8W
JR16	1-216-295-00	METAL CHIP 0 5%	1/10W
JR17	1-216-296-00	METAL CHIP 0 5%	1/8W
JR18	1-216-295-00	METAL CHIP 0 5%	1/10W
JR20	1-216-295-00	METAL CHIP 0 5%	1/10W
JR21	1-216-296-00	METAL CHIP 0 5%	1/8W
JR24	1-216-295-00	METAL CHIP 0 5%	1/10W
JR25	1-216-296-00	METAL CHIP 0 5%	1/8W
JR27	1-216-296-00	METAL CHIP 0 5%	1/8W
JR29	1-216-296-00	METAL CHIP 0 5%	1/8W
JR30	1-216-296-00	METAL CHIP 0 5%	1/8W
		< TRANSISTOR >	
Q101	8-729-402-32	TRANSISTOR 2SD1819A-R	
Q102	8-729-402-32	TRANSISTOR 2SD1819A-R	
Q103	8-729-402-93	TRANSISTOR UN5214-TW	
Q301	8-729-403-27	TRANSISTOR XN4401	
Q302	8-729-402-96	TRANSISTOR UN5114	
Q303	8-729-402-32	TRANSISTOR 2SD1819A-R	
Q304	8-729-402-33	TRANSISTOR 2SD1819A-S	
Q305	8-729-420-16	TRANSISTOR XN1214	
Q306	8-729-402-32	TRANSISTOR 2SD1819A-R	
Q401	8-729-402-84	TRANSISTOR XN4601	
Q501	8-729-425-21	TRANSISTOR UN5119	
Q502	8-729-402-81	TRANSISTOR XN4501	
Q503	8-729-402-81	TRANSISTOR XN4501	

Ref.No.	Part No.	Description	Remark
		< RESISTOR >	
R101	1-216-822-11	METAL CHIP 1.2K 5%	1/16W
R102	1-249-441-11	CARBON 100K 5%	1/4W
R103	1-249-424-11	CARBON 3.9K 5%	1/4W
R104	1-249-438-11	CARBON 56K 5%	1/4W
R105	1-249-438-11	CARBON 56K 5%	1/4W
R106	1-249-418-11	CARBON 1.2K 5%	1/4W
R107	1-216-838-11	METAL CHIP 27K 5%	1/16W
R108	1-249-430-11	CARBON 12K 5%	1/4W
R109	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R110	1-249-409-11	CARBON 220 5%	1/4W
R111	1-249-409-11	CARBON 220 5%	1/4W
R112	1-216-801-11	METAL CHIP 22 5%	1/16W
R113	1-216-813-11	METAL CHIP 220 5%	1/16W
R114	1-216-793-11	METAL GLAZE 4.7 5%	1/16W
R115	1-216-800-11	METAL GLAZE 18 5%	1/16W
R116	1-249-405-11	CARBON 100 5%	1/4W
R117	1-216-853-11	METAL CHIP 470K 5%	1/16W
R119	1-249-429-11	CARBON 10K 5%	1/4W
R120	1-249-423-11	CARBON 3.3K 5%	1/4W
R121	1-249-417-11	CARBON 1K 5%	1/4W
R122	1-249-408-11	CARBON 180 5%	1/4W
R123	1-216-823-11	METAL CHIP 1.5K 5%	1/16W
R125	1-249-405-11	CARBON 100 5%	1/4W
R126	1-215-442-00	METAL 7.5K 1%	1/6W
R129	1-216-823-11	METAL CHIP 1.5K 5%	1/16W
R301	1-216-833-11	METAL CHIP 10K 5%	1/16W
R302	1-216-835-11	METAL CHIP 15K 5%	1/16W
R303	1-249-419-11	CARBON 1.5K 5%	1/4W
R304	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R305	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R306	1-249-405-11	CARBON 100 5%	1/4W
R307	1-216-853-11	METAL CHIP 470K 5%	1/16W
R308	1-216-861-11	METAL CHIP 2.2M 5%	1/16W
R309	1-216-834-11	METAL CHIP 12K 5%	1/16W
R310	1-216-857-11	METAL CHIP 1M 5%	1/16W
R311	1-216-835-11	METAL CHIP 15K 5%	1/16W
R312	1-216-835-11	METAL CHIP 15K 5%	1/16W
R313	1-216-835-11	METAL CHIP 15K 5%	1/16W
R314	1-216-857-11	METAL CHIP 1M 5%	1/16W
R315	1-216-843-11	METAL CHIP 68K 5%	1/16W
R316	1-249-417-11	CARBON 1K 5%	1/4W
R317	1-216-840-11	METAL CHIP 39K 5%	1/16W
R401	1-216-856-11	METAL CHIP 820K 5%	1/16W
R402	1-249-429-11	CARBON 10K 5%	1/4W
R403	1-249-408-11	CARBON 180 5%	1/4W
R404	1-249-418-11	CARBON 1.2K 5%	1/4W
R405	1-216-845-11	METAL CHIP 100K 5%	1/16W

MAIN SLIDE SW (PRC)

Ref. No.	Part No.	Description			Remark
R501	1-216-833-11	METAL CHIP	10K	5%	1/16W
R502	1-249-429-11	CARBON	10K	5%	1/4W
R503	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R504	1-216-833-11	METAL CHIP	10K	5%	1/16W
R507	1-249-425-11	CARBON	4.7K	5%	1/4W
R508	1-249-429-11	CARBON	10K	5%	1/4W
R509	1-249-429-11	CARBON	10K	5%	1/4W
R510	1-249-429-11	CARBON	10K	5%	1/4W
R601	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R602	1-216-994-11	METAL GLAZE	13K	5%	1/16W
R603	1-216-230-00	METAL GLAZE	22K	5%	1/8W
R604	1-216-834-11	METAL CHIP	12K	5%	1/16W
R605	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R606	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R607	1-216-842-11	METAL CHIP	56K	5%	1/16W
		< VARIABLE RESISTOR >			
RV101	1-223-293-11	RES, VAR, CARBON 50K (VOL)			
RV601	1-238-665-11	RES, ADJ, CERMET 22K (TAPE SPEED)			
		< SWITCH >			
S101	1-571-151-11	SWITCH, SLIDE (REC/PB)			
S102	1-571-478-11	SWITCH, SLIDE (VOR)			
S601	1-570-675-11	SWITCH, SLIDE (PAUSE/SWITCH)			
S602	1-692-397-21	SWITCH, SLIDE (FAST PB/SWITCH)			
		< THERMISTOR >			
TH601	1-808-980-11	THERMISTOR			
		< THERMISTOR(POSITIVE) >			
THP601	1-810-007-11	THERMISTOR, POSITIVE			
**********					
*	1-646-499-11	SLIDE SW (PRC) BOARD			
		**********			
		< SWITCH >			
S103	1-572-581-11	SWITCH, SLIDE (MIC SENS)			
**********					
		MISCELLANEOUS			
		**********			
8	1-548-582-11	COUNTER, TAPE (SMALL TYPE)			
HRP901	1-543-607-21	HEAD, MAGNETIC (REC/PB)			
M901	X-3366-095-1	MOTOR, ASSY			
MIC901	1-542-142-11	MICROPHONE, BUILT-IN			
S104	1-692-400-11	SWITCH, LEAF(POWER)			
SP901	1-544-657-11	SPEAKER (3.6CM)			

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
*	3-387-183-01	CUSHION (TOP) (US)	
*	3-387-184-01	CUSHION (BOTTOM) (US)	
	3-756-196-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTGUESE) (Canadian, AEP, UK, E, Saudi Arabia, Tourist)	
	3-756-196-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-756-196-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)	

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TCM-S68V

SONY

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

SUPPLEMENT-1

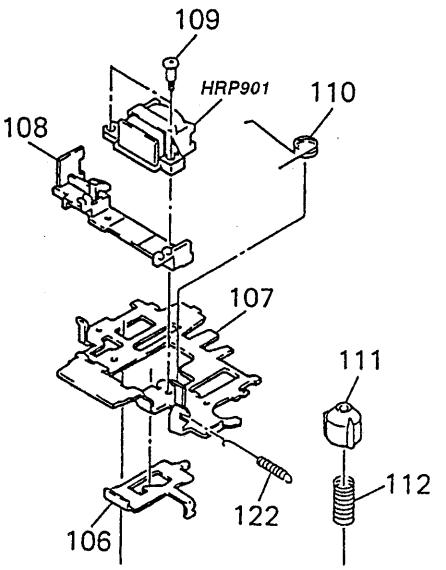
File this Supplement with the Service Manual.

Subject : Change of REC/PB Head

Page 11

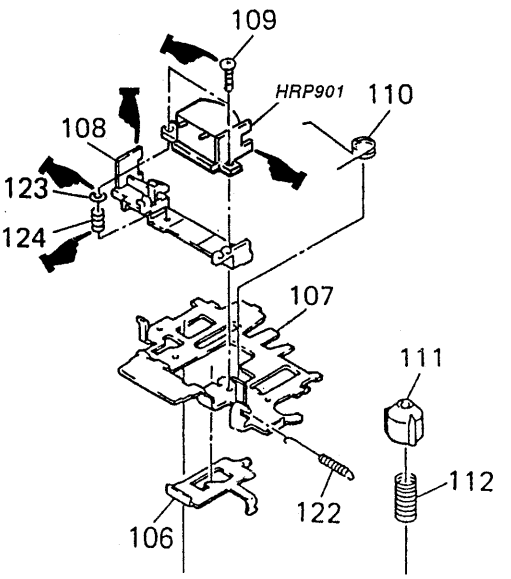
☛ or under line : changed portion

Former



Ref. No.	Part No.	Description
108	3-385-721-01	GUIDE, HEAD
109	3-385-723-01	SCREW
123	————————	
124	————————	
HRP901	1-543-607-21	HEAD, MAGNETIC (REC/PB)

New



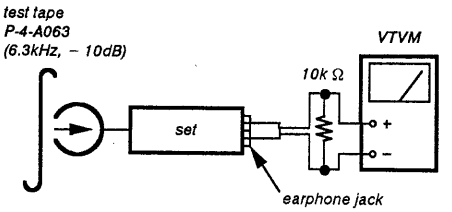
Ref. No.	Part No.	Description
108	3-907-591-01	GUIDE, HEAD
109	3-907-592-01	SCREW
123	3-907-593-01	WASHER
124	3-907-594-01	SPRING
HRP901	1-543-410-11	HEAD, MAGNETIC (REC/PB)

The record/playback head azimuth adjustment is requested due to this change.

Record/playback Head Azimuth Adjustment

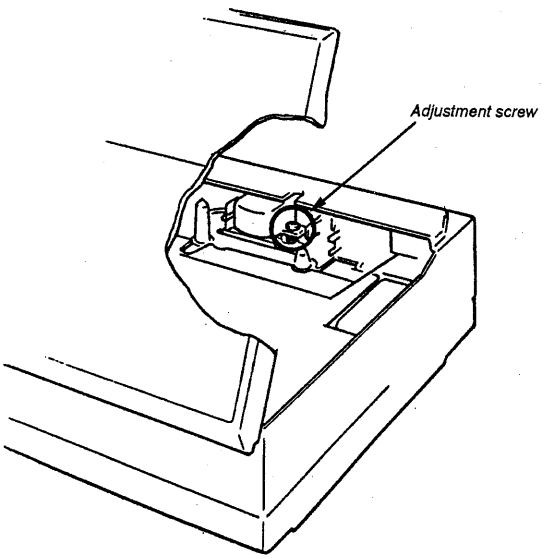
Procedure :

1. Mode : Playback



2. Turn the adjustment screw to obtain the maximum reading on VTVM.
   Note : Several peaks may appear, but take the maximum.
3. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location :



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Published by Audio Sector Quality Assurance Dept.

TCM-S68V

SONY

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

SUPPLEMENT-2

File the Supplement with the Service Manual and Supplement-1.

Subject :

1. CHANGE OF BOARDS
2. CORRECTION

(ECN-MT300499)

9-957-623-82

Sony Corporation
Consumer A&V Products Company
Personal A&V Products Div.

English
94K0288-1
Printed in Japan
©1994.11
Published by Home A&V Products Div.
Quality Engineering Dept.

1. CHANGE OF BOARDS

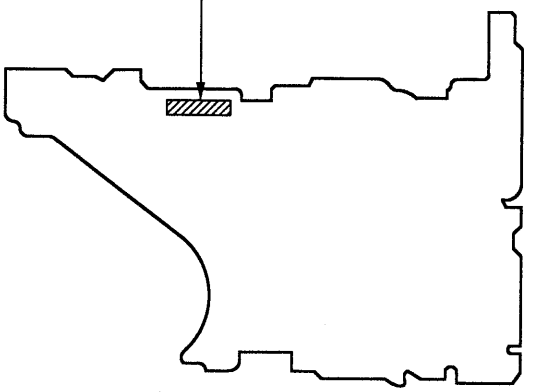
The boards have been changed.

Printed wiring boards and schematic diagram of new type, and changed parts list are described in this Supplement-2.

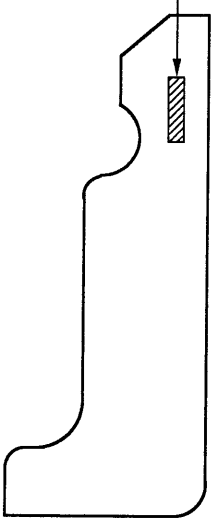
Refer to original service manual previously issued for the other information.

NEW TYPE IDENTIFICATION

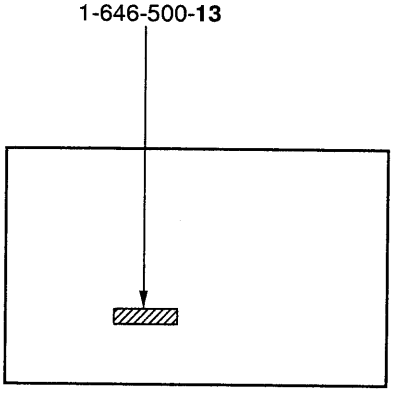
– **MAIN board** (Conductor Side) –
1-646-498-**13**



– **SLIDE SW board** (Conductor Side) –
1-646-499-**13**



– **CUE SW board** (Conductor Side) –
1-646-500-**13**

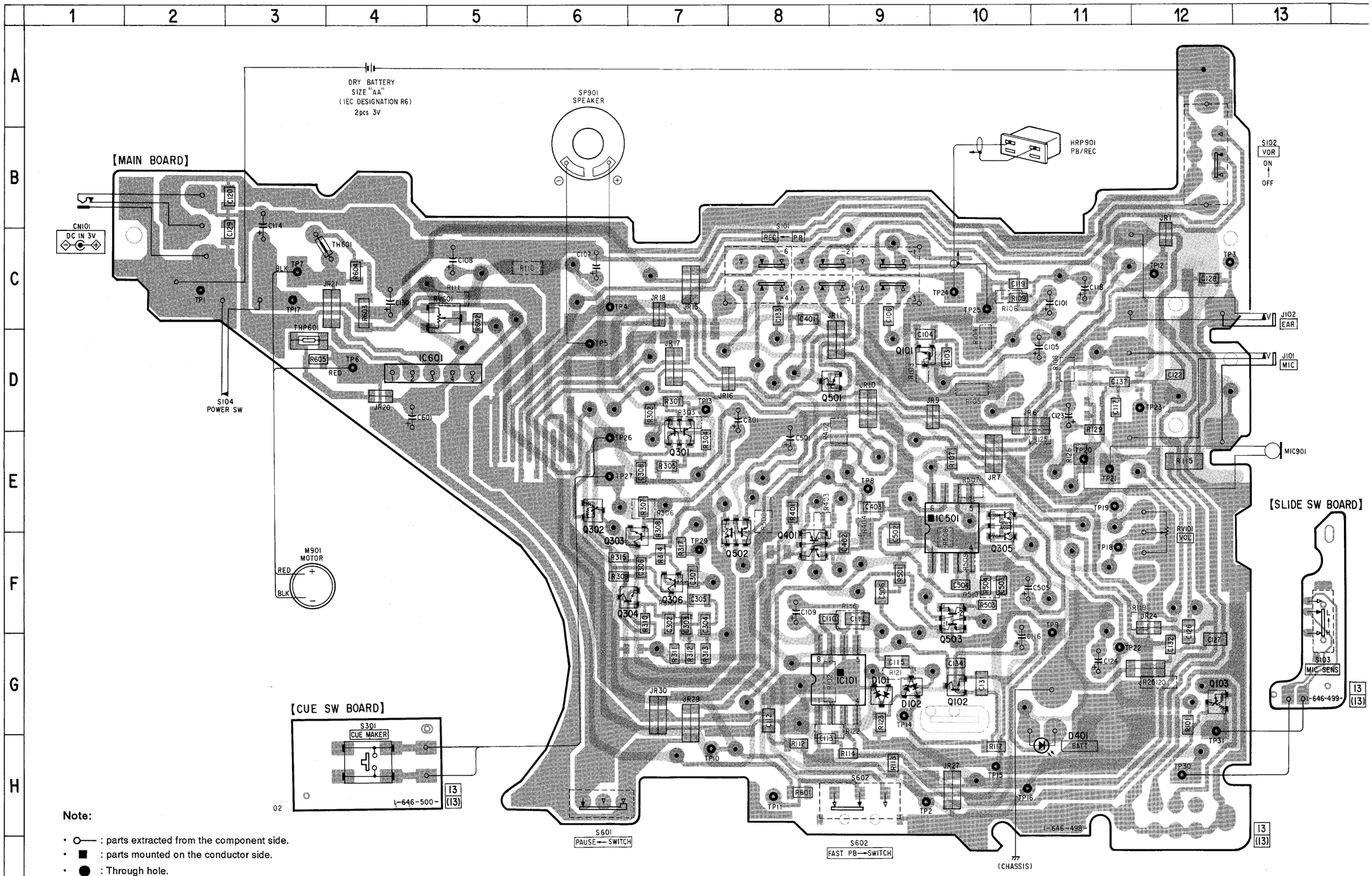


1-1. PRINTED WIRING BOARDS

• Refer to page 5 for Semiconductor Lead Layouts.

• **SEMICONDUCTOR LOCATION**

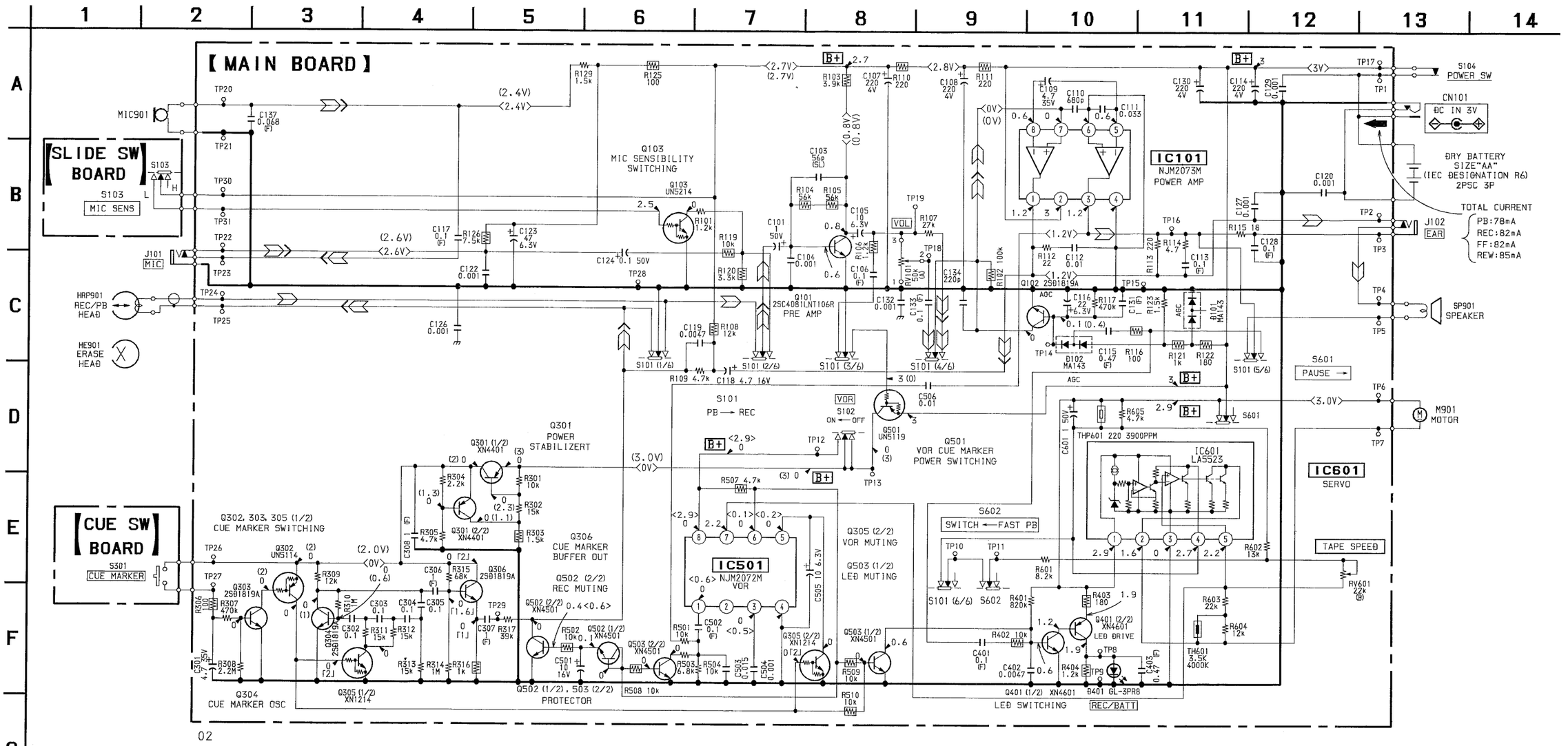
Ref. No.	Location
D101	G - 9
D102	G - 9
D401	H - 11
IC101	G - 9
IC501	E - 10
IC601	D - 5
Q101	D - 9
Q102	G - 10
Q103	G - 12
Q301	E - 7
Q302	E - 6
Q303	F - 7
Q304	F - 6
Q305	E - 10
Q306	F - 7
Q401	F - 8
Q501	D - 9
Q502	E - 8
Q503	F - 10



Note:

- ○— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▒▒ : Pattern on the side which is seen.
- ▒▒ : Pattern of the rear side.
- ⊏⊐ : printed resistor.

1-2. SCHEMATIC DIAGRAM

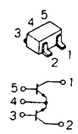


• SEMICONDUCTOR LEAD LAYOUTS

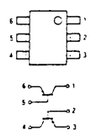
LA5523

2SC1623-L5L6
2SD1819A-R
2SD1819A-S
UN5114
UN5119
UN5214-TW

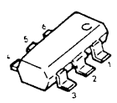
XN1214



XN4401

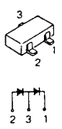


XN4501



XN4601

1SS226



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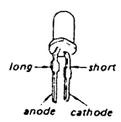

Note :

- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- : printed resistor.
- B+ : B+ Line
- : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is dc 3V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PLAY
  ( ) : REC
  〈 〉 : VOR ON
  [ ] : CUE ON
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : PB
  : REC

1-3. CHANGED ELECTRICAL PARTS LIST

MAIN

Ref. No.	Former Type		New Type		Remark
	Part No.	Description	Part No.	Description	
C102	1-126-160-11	ELECT 1uF 20% 50V	———	———	Deleted
C104	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	Changed
C113	1-164-156-11	CERAMIC CHIP 0.1uF 25V	1-163-038-00	CERAMIC CHIP 0.1uF 25V	Changed
C115	1-164-346-11	CERAMIC CHIP 1uF 16V	1-164-005-11	CERAMIC CHIP 0.47uF 16V	Changed
C120	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	1-163-009-11	CERAMIC CHIP 0.001uF 50V	Changed
C128	1-164-156-11	CERAMIC CHIP 0.1uF 25V	1-163-031-11	CERAMIC CHIP 0.01uF 50V	Changed
C129	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	1-163-009-11	CERAMIC CHIP 0.001uF 50V	Changed
C401	1-164-156-11	CERAMIC CHIP 0.1uF 25V	1-163-038-00	CERAMIC CHIP 0.1uF 25V	Changed
C402	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	1-163-017-00	CERAMIC CHIP 0.0047uF 10% 50V	Changed
C502	1-164-156-11	CERAMIC CHIP 0.1uF 25V	1-163-038-00	CERAMIC CHIP 0.1uF 25V	Changed
JR3	1-216-296-91	METAL CHIP 0 5% 1/8W	———	———	Deleted
JR4	1-216-296-91	METAL CHIP 0 5% 1/8W	———	———	Deleted
JR5	1-216-296-91	METAL CHIP 0 5% 1/8W	———	———	Deleted
Q101	8-729-402-32	TRANSISTOR 2SD1819A-R	8-729-120-28	TRANSISTOR 2SC1623-L5L6	Changed
R107	1-216-838-11	METAL CHIP 27K 5% 1/16W	1-216-083-00	METAL GLAZE 27K 5% 1/10W	Changed
R112	1-216-801-11	METAL CHIP 22 5% 1/16W	1-216-009-00	METAL GLAZE 22 5% 1/10W	Changed
R113	1-216-813-11	METAL CHIP 220 5% 1/16W	1-216-033-00	METAL GLAZE 220 5% 1/10W	Changed
R115	1-216-800-11	METAL GLAZE 18 5% 1/16W	1-216-156-00	METAL GLAZE 18 5% 1/8W	Changed
R117	1-216-853-11	METAL CHIP 470K 5% 1/16W	1-216-113-11	METAL GLAZE 470K 5% 1/10W	Changed
R123	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	Changed
R302	1-216-835-11	METAL CHIP 15K 5% 1/16W	1-216-077-00	METAL GLAZE 15K 5% 1/10W	Changed
R305	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	Changed
R401	1-216-856-11	METAL CHIP 820K 5% 1/16W	1-216-119-00	METAL GLAZE 820K 5% 1/10W	Changed
R405	1-216-845-11	METAL CHIP 100K 5% 1/16W	———	———	Deleted
R501	1-216-833-11	METAL CHIP 10K 5% 1/16W	1-216-073-00	METAL GLAZE 10K 5% 1/10W	Changed
R601	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	Changed
R604	1-216-834-11	METAL CHIP 12K 5% 1/16W	1-216-075-00	METAL GLAZE 12K 5% 1/10W	Changed
R605	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	Changed
R606	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	———	———	Deleted
R607	1-216-842-11	METAL CHIP 56K 5% 1/16W	———	———	Deleted

2. CORRECTION

Correct your service manual as shown below.

EXPLODEED VIEWS

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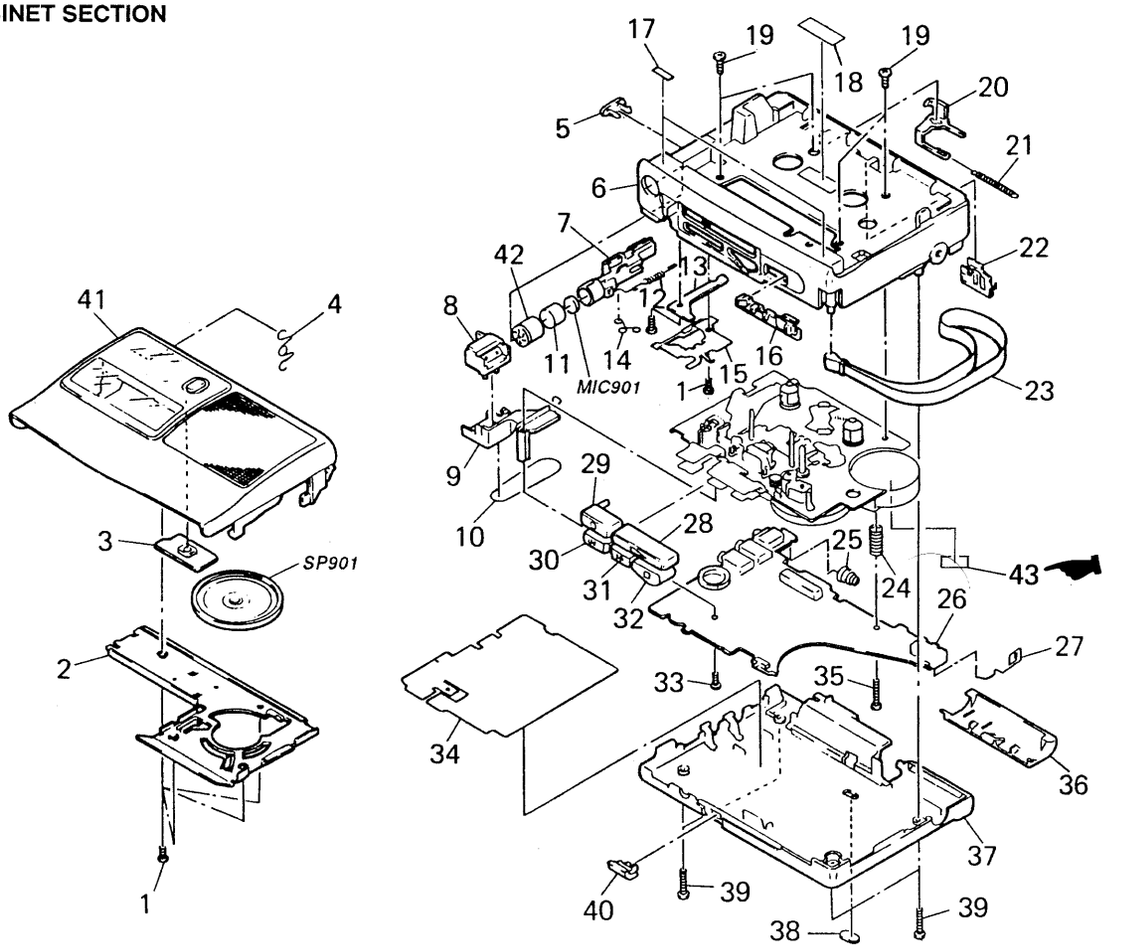
☛ : Corrected portion

CABINET SECTION



EXPLODED VIEWS PARTS LIST

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	Incorrect	Correct
Ref. No.	Part No. Description	Part No. Description
43	————————————	*3-386-313-01 CUSHION (BATTERY CASE LID)